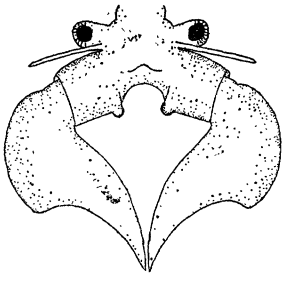

Fig. 2. Front aspect of head of male *Artemia franciscana*, n. sp., showing eyes, antennæ and claspers.

Artemia franciscana n. sp. (Figs. 1 and 2). Body slender; length of mature females (with eggs) from 6 mm. to 13 mm., males 5 mm. to 8.5 mm.; color translucent whitish to dull brick-red; claspers of male with stout median part and elongate, regularly tapering acute-angled terminal part; the suture between second and third segments is wholly lacking (this condition practically breaking down the distinction between the genus *Artemia* and the genus *Branchipus*), and there is no indication by external angle or change in direction of the outer or inner margins to indicate the point of fusion of these two segments (Fig. 1); egg-sac of female as broad as long; caudal appendages longer than broad, longer than in any of the other three known American species, and with scattered hairs all along both sides of each appendage (this character also tends to approach the condition in *Branchipus*). This species in a way serves to connect the genera *Branchipus* and *Artemia* but in all its general habitus and in the shape (very characteristic) of the claspers of the male it is much nearer the described *Artemia* forms than the *Branchipus* type. Males, females, eggs and larval stages found abundantly in the salterns (evaporating pools), density 1.08 to 1.24, at Redwood City, San Francisco Bay, in September, 1906.

As mentioned in the species description, mature specimens, both males and females, of this *Artemia* vary markedly in size and coloration. They vary also in degree of activity. All these differences are plainly correlated with the different life-conditions of the creatures. The water of San Francisco Bay has a density of 1.024. Pools of evaporating salt solution of the following densities were examined: 1.06, 1.085, 1.11, 1.137, 1.187, 1.19, 1.20, 1.207, 1.23, 1.24. Beyond this density the salt is precipitating rapidly. *Artemias* occur in all these pools from 1.08 on, most abundant, largest and most active, however, in water of 1.11 and 1.13. In water of less density than 1.11 the *Artemias* are large but not so abundant; in water of greater density they are noticeably smaller, and in the densities of 1.20 and upward they are much smaller and much less active. The color variation is also associated with the density, both males and females in the denser pools being reddish, the females alone reddish in the waters of medium density, and both males and females translucent whitish in the pools of 1.085, 1.11 and 1.137. In water of 1.24 (in which the salt is precipitating slowly) there are not many *Artemias* and they are all reddish, very small and noticeably inactive.

With special reference to the differences which Schmankewitsch and Anikin found among individuals of *Artemia salina* grown in salt solutions of various densities I may confine myself, at present (pending the outcome of more systematic observation and experimentation), to the statement that differences in proportional length of post-abdomen to rest of body, in character of the abdominal segmentation and in length and hairiness of the caudal appendages are apparent in this new *Artemia* and evidently bear a definite relation to the different densities of the pools in which the *Artemias* are living.

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Some Unusual New Jersey Fishes.

During the past summer Mr. Wm. J. Fox was located at Sea Isle City, N. J., and observed or obtained the following species: *Lamna cornubica, Galeocerdo tigrinus, Myliobatis freminvillii, Clupanodon oglinum, Lucania parva, Tylosurus raphidoma, Hemiramphus brasiliensis, Albacora thynnus, Seriola lalandi, Blepharichthys crinitus, Vomer setapinnis, Palinurichthys perciformis, Bairdiella chrysura, Chætodipterus faber, Pomacanthus arcuatus, Balistes carolinensis, Alutera schœpfii* and *Echeneis alba-cauda.* A fine example of *Istiophorus nigricans* was also secured. *Stephanolepis hispidus* and *Ortho-*

pristis chrysopterus were taken at Palermo, in Cape May County, by Mr. George Z. Hartman, and at Cape May Mr. H. Walker Hand reports *Lagodon rhomboides* and *Limanda ferruginea*.

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QUOTATIONS.

'BOTANY IN ENGLAND.'

PROFESSOR F. W. OLIVER'S presidential address to the botanical section of the British Association consisted of two parts, one dealing with 'The Seed, a Chapter in Evolution,' the other with 'Botany in England.' With the former we do not propose to deal; but the latter raises so many points for discussion that we can not but wonder that Professor Oliver selected for its delivery an opportunity when discussion was impossible. Although headed 'Botany in England,' it is mainly occupied with an attack upon the two great public herbaria—which, in Professor Oliver's opinion,' stand apart from the ordinary botanical current,' and must consequently 'languish' or suffer 'atrophy through disuse.'

Professor Oliver's style is not easy to follow, and we sometimes find it difficult to grasp his meaning. We propose, however, to offer a few remarks upon some of his statements, premising that we do not admit his claim to act as a judge in matters with which it is abundantly evident he is but imperfectly acquainted.

Having given a very brief sketch of what he considers 'the prevailing school of botany,' Professor Oliver proceeds to inform us that it 'has arisen very independently of that which preceded it.' Here we must at once join issue with him. He continues: 'All through the middle parts of the last century we were so busy amassing and classifying plants that the great questions of botanical policy were left to solve themselves.' Yet this period included the morphological work of Robert Brown, Lindley and Sir Joseph Hooker, not to mention that of Carruthers and W. C. Williamson, who were largely instrumental in establishing the science of paleobotany, and without whose work the first part of Professor Oliver's address would hardly have been written. In view of the above references, can it be said with any degree of accuracy that 'the prevailing school of botany has arisen very independently of that which preceded it?'

Professor Oliver continues:

> Great herbaria became of the order of things; they received government recognition, and they continue their work apart. Those who built up these great collections neglected to convince the schools of the importance of training a generation of botanists that would use them. The schools were free, and they have gone their own way, and that way does not lie in the direction of the systematic botany of the herbarium. So long as this tendency prevails, the herbaria must languish. When I say languish, I do not mean that they will suffer from inefficient administration—their efficiency probably has never been greater than at the present time. But the effort involved in their construction and up-keep is altogether disproportionate to any service to which they are put. * * * If things are left to take their course there is the fear of atrophy through disuse.

It is not easy to understand what Professor Oliver means in the first portion of this paragraph. The main function of 'the schools,' as it appears to us, is not to train a generation of botanists to use herbaria, but to impart a general knowledge of the subject which will enable the student to follow up any line which may have a special attraction for him, including, of course, systematic botany. But the flourishing existence of herbaria depends very little upon 'the schools.' The students of botany both at the British Museum and at Kew are sufficiently numerous to show that Professor Oliver's fear of 'atrophy through disuse' is groundless, although according to him these herbaria 'stand apart from the ordinary botanical current.' Whatever may have been 'the effort involved in their construction,' it is a thing of the past, and its proportion or disproportion to the 'service to which they are put' can not be discussed: their 'efficiency,' he admits, was 'never greater than at present.' It may be that besides the 'ordinary botanical current' with which Professor Oliver is acquainted, there is another of whose course he is ignorant.

Having, however, satisfied himself that the 'general position of systematic botany' re-